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EXAMINER	
YIP, JACK	

ART UNIT	PAPER NUMBER
3715	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/675,232	BODNER ET AL.	
	Examiner	Art Unit	
	JACK YIP	3715	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/20/2010 and 12/28/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment filed 11/23/2010; claims 1 - 42 are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claim 37 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.** The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original specification states ("The off-site school officials system 720, for example, utilized by the school district personnel, allows receipt and analysis of the feedback data 750, which enables the evaluation of progress at the school level, and facilitates decisions such as budget allocations to various schools within the school district."); the original specification does not states **the system recommended course of action** ... a superintendent making a budget decision.."

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 - 3, 5 - 6, 9 - 10, 28 - 29, 36, 38 - 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donahue (US 2003/0039948 A1) in view of Best et al. (US 6,676,413 B1).

Re claim 1:

[Claim 1] Donahue discloses a computerized system for analyzing student performance data and providing feedback based on the student performance data (Donahue, Abstract, “”), the system comprising:

a computer network interface module configured to receive student performance data and transmit recommendation data via a computer network (Donahue, [0025], [0054]; [0032], “feedback”);

a data acquisition module configured to receive the student performance data from the computer network interface module and reformat the student performance data (Donahue, [0059], [0075], “user’s profile”);

a performance analysis module configured to receive the reformatted student performance data from the data acquisition module and generate analysis data by analyzing the reformatted student performance data (Donahue, [0059], fig 1, “ASSESSMENT ANALYSIS”); and

a real-time feedback generation module (Donahue, real-time feedback - fig. 2, 42, “INDICATE UNACCEPTABLE”, 44, “INDICATE ACCEPTANCE”, 50, “PRESENT LESSON RESULT”, [0048], “The user logs into the system 10 at block 12. Block 12 may include prompting the user for a user identification and password to verify that the proper party is accessing the system.” The user login a real time system; [0055] - [0058], i.e., [0056], “The system then repeats step at block 14, presenting the user with the next lesson element or group of lesson elements, and the process is repeated. **If the user responds "no" at decision block 44, the results of the user's assessment are presented to the user as represented at block 50 (REAL-TIME FEEDBACK),** and also saved and utilized by the system at block 48. The tutorial system then logs the user out of the system as at block 28.”; A user is logs into the system, conduct the assessment, the system verify an assessment responses and present the result before logs out.) configured to receive the analysis data from the performance analysis module and generate the

recommendation data based on the analysis data (Donahue, [0047], "feedback"), wherein the computer network interface module receives the recommendation data from the feedback generation module and transmits the recommendation data onto the computer network to a school official (Donahue, [0059] - [0062], [0075]), wherein the recommendation data comprises a plurality of courses of action (Donahue, [0026] - [0029], "A plurality of lesson elements make up a lesson or lesson plans"; i.e. [0026], "lesson may include lesson elements including (i) learning how to pronounce the sound that make … (ii) pronouncing similar sounding words... (iii) identifying the correct…") at the level of each class and school.

Donahue does not explicitly disclose a recommendation data onto the computer network to a school official at the level of each class and school. However, Best et al. (US 6,676,413 B1) teaches a system and method that analyzes student performance and provide feedback regarding the student performance, for example, to an instructor, other school official, parent or directly to the student. Best further teaches (Best, figs 5A - 5D, "Kindergarten, Benchmark One, First Grade…" figs 6A - 6B, "Class Reading Status…"; figs. 8A - 8B, col 5, lines 28 - 67; col 6, lines 1 - 37) a plurality of class, grade level and school level (Best, figs 9 - 15, fig 10, "Schools", "Campus 1", "Struggling, Emerging, On Track"…") feedback. Best further states (Best,col 4, lines 18 - 45; fig 6B, col 6, lines 7 - 56; fig 8A - 8B;) "This report aggregates the calculated predictive measures of literacy for all students in the class and presents the results in FIG. 8A as a bar chart 41 graphically depicting the number of students at each level of literacy and as a table of numeric data 42, numerically presenting the same information as the bar chart 41. Recommendations 43 for curriculum and instruction time, as described for FIG. 6B, are also presented in this report, as shown in FIG. 8B." Best teaches the recommendation data comprises a plurality of courses of action at the level of each class and school (Best, fig 6B, fig 8B - class level; fig 13, "Attended 2 Sessions, Need support implementing reading stations, Need some support with Learning Station Rotation".).

Therefore, in view of Best, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system described in Donahue, by providing the recommendation as taught by Best, since Best states (Best, col 1, lines 63 - 67; col 2, lines 1 - 28) "Reports are given on the performance of all students tested; individual results are reported normatively; i.e., compared to other students… provided for reporting on the performance of teachers in the improvement of those reading skills. Those programs that provide general suggestions for remedial instruction activities for students do not collect information on the application of those suggestions, to allow administrators to evaluate the teachers, as well as the students…"

Re claims 2 - 3:

The system of Claim 1, wherein the student performance data indicates a source of the data, wherein the data source is a school, a teacher or a student (Donahue, [0035] - [0045], [0059] - [0060]).

Re claim 5;

The system of Claim 1, wherein the student performance data comprises a score achieved by the student on a performance evaluation, and wherein the performance evaluation is a game, a lesson, a quiz or a test (Donahue, [0055]).

Re claim 6:

The system of Claim 1, wherein the performance data indicating a student, teacher, or school that is the source of the test data, wherein the data is encrypted (Donahue, [0048], [0060], [0067], "user logs in" a user logs in the system, therefore, the test data is encrypted.).

Re claim 9:

The system of Claim 1, wherein the analysis data comprises a learning curve (Donahue, [0049])

Re claim 10:

The system of Claim 1, wherein the computer network is the Internet (Donahue, [0025]).

Re claim 28:

The system of Claim 1, wherein data the plurality of courses of action comprises an optional course of action (Donahue, [0062]).

Re claim 29:

The system of Claim 1, wherein data the plurality of courses of action comprises a corrective course of action (Donahue, [0062]).

Re claim 36:

The system of Claim 1, wherein one of the plurality of courses of action comprises a school principal making a personnel decision for a particular class based on the analysis data (Best, fig 6B, fig 8B, see claim 1 for motivations).

Re claim 38:

The system of Claim 1, wherein one of the plurality of courses of action comprises the school official entering a command onto the computer network that enables a particular student to advance to a higher level of the game (Best, fig 4A, col 3, lines 47 - 50; "test results entry"; fig 6B, fig 8B, "games: 9 and 11; Game 10 and 1 - 8…", see claim 1 for motivations).

Re claim 39:

The system of Claim 13, wherein the plurality of courses of action include having the school official review quiz-taking skills with the student and having the student review key words or phrases (Best, figs 5A - 5B, col 4, lines 46 - 67; col 5, lines 1 - 8, "giving an example of a correct response and asking the student to respond to a practice word. The teacher is given samples of correct and incorrect responses to the practice word and scripts to use in reply to the student's response, correct or incorrect. FIG. 3B depicts a work sheet for administering a test to a

single student. A series of test words 15 to be read to the student are listed, and the correct phoneme responses 16 for each test word are shown for the teacher's reference. Results of the test are entered into blanks 17 to record the student's performance on the test.") before retaking a quiz (Best, Abstract, "administering standardized oral fluency measures", see claim 1 for motivations).

6. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donahue (US 2003/0039948 A1) in view of Best et al. (US 6,676,413 B1) and Policastro et al. (US 6,915,286).

Donahue does not teaches the system of Claim 1, wherein one of the plurality of courses of action comprises a superintendent making a budget decision for a particular school based on the analysis data. However, Policastro et al. (US 6,915,286) (Policastro, col 1, lines 20 - 38) teaches School system administrators, principals, counselors, faculty members and support staff make decisions that influence the learning environment either at a system-wide, local school, or at an individual student level…a school administrator with a large and diverse student population may have difficulty in determining the correlation between a number of factors, such as academic preparedness, student mobility, course enrollment, and student test scores on standardized tests. An understanding of the relationships between these factors may influence staffing decisions, funding for a local school program, and/or result in changes to a student's academic plans.

Therefore, in view of Policastro, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system described in Donahue, by providing the funding feature as taught by Policastro, since Policastro states (Policastro, col 1, lines 20 - 38) "… access the right data at the right time or to acquire reliable, consistent and accurate data also thwarts the efforts of faculty and staff to apply data in the decision making process."

7. Claims 4, 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donahue (US 2003/0039948 A1) in view of Best et al. (US 6,676,413 B1) and Bejar et al. (US 6,526,258).

Re claim 4:

Donahue does not disclose the student performance data comprises indexing the data with codes that have been pre-assigned to the school, teacher or student. However, Bejar teaches indexing data with codes (Bejar, fig 3, figs 8-9). Therefore, in view of Bejar, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system described in Donahue, by providing the indexing data as taught by Bejar to provide a shorthand notation that saves time and space.

Re claims 11 - 12:

Donahue discloses analyzing stored data in a database and generating remedial recommendations based on learning problems (Donahue, [0063]). But Donahue does not specifically disclose a relational database. However, Bejar discloses the use of a relational database for analyzing responses of test questions (Bejar, Col. 2, Line 44-Col. 3, Line 17). Therefore, in view of Bejar, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system described in Donahue, by providing the relational database as taught by Bejar to provide a detailed, organized, database from which a meaningful assessment can be made.

Regarding the limitations of determining one or more universals of learning, note that the manner of operating the system does not differentiate the system from the prior art unless there results a structural difference that would patentably distinguish the systems.

8. Claims 7- 8. 13 - 18, 30 - 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donahue (US 2003/0039948) in view of Bejar et al. (US 6,526,258) and "Keeping Mozart in Mind" by Gordon L. Shaw (Copyright 2000) denote as Shaw.

Re claims 7 - 8:

Donahue discloses the use of data representing the progress of consecutive lessons (Donahue, [0046] - [0047]). Donahue does not specifically disclose a spatial temporal math video game. However, Shaw teaches (Shaw, pgs 22 - 28, "ROLE OF MUSIC EDUCATION IN LEARNING MATH AND SCIENCE"; pg 189, "FIRST VERSION OF S.T.A.R."; pg 275, "SPATIAL-TEMPORAL TRAINING USING S.T.A.R. TO IMPROVE MATH"; pg 275, "Matthew Peterson quickly became (and remains) the chief architect and developer of the now proven and highly successful math video game S.T.A.R. and its evaluation program S.T.A.R.") a spatial temporal math video game.

Therefore, in view of Shaw, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system/method described in Donahue, by providing the S.T.A.R. as taught by Shaw, since Shaw (Shaw, pg 201) "The ST methods in S.T.A.R. can be extended to almost all math at all levels. As an example, the use of symmetries in ST methods has been used successfully by Xiao Leng in analyzing the behavior of equations for a pre-calculus course that she teaches at Pasadena City College. Thus, the use of spatial-temporal methods to enhance understanding of math is not limited to disadvantaged and/or very young students." (Shaw, pgs 274 - 275) "The chief goals of S.T.A.R. were to teach fractions, proportional math, and symmetry operations to 2nd grade children. These math concepts were all successfully included in S.T.A.R. in a manner that was readily understood and mastered by these children, as measured by S.T.A.R. E.P"

Re claims 13 - 15, 17:

[Claim 13] A computerized system for analyzing student performance data and providing feedback based on the student performance data (Donahue, Abstract), the system comprising:

a student computer system configured to administer performance evaluation and record student response data (Donahue, [0025], [0054]; [0032], "feedback");

an education module configured to receive the student response data from the student system and generate student performance data indicative of the level of the student's

mastery of the subject matter of the performance evaluation (Donahue, [0059], fig 1, "ASSESSMENT ANALYSIS");

an analysis and feedback module configured to receive the student performance data from the education module and generate feedback data by performing an analysis of the student performance data(Donahue, [0047]); and

a school official computer system configured to receive the feedback data from the analysis and feedback module (Donahue, [0059] - [0062], [0075]), wherein the feedback data comprises recommendations to a school official for enhancing student performance on subsequent performance evaluations, wherein the recommendations comprise a plurality of courses of action (Donahue, [0026] - [0029], "A plurality of lesson elements make up a lesson or lesson plans"; i.e. [0026], "lesson may include lesson elements including (i) learning how to pronounce the sound that make … (ii) pronouncing similar sounding words... (iii) identifying the correct…").

Donahue does not explicitly disclose wherein the analysis of the student performance data identifies a level of the student's mastery of the subject matter, wherein the levels are 1) mastery of the subject matter has already been obtained, 2) mastery of the subject matter is being obtained, and 3) mastery of the subject matter is not being obtained. However, Best et al. (US 6,676,413 B1) teaches a system and method that analyzes student performance and provide feedback regarding the student performance, for example, to an instructor, other school official, parent or directly to the student. Best further teaches wherein the analysis of the student performance data identifies a level of the student's mastery of the subject matter, wherein the levels are 1) mastery of the subject matter has already been obtained (Best, figs 5A - 5D, figs 6A - 6B, "ON-TRACK"; col 5, lines 43 - 67; col 6, lines 1- 26), 2) mastery of the subject matter is being obtained (Best, figs 5A - 5D, figs 6A - 6B, "EMERGING"; col 5, lines 43 - 67; col 6, lines 1- 26), and 3) mastery of the subject matter is not being obtained (Best, figs 5A - 5D, figs 6A - 6B, "STRUGGLING"; col 5, lines 43 - 67; col 6, lines 1- 26). Therefore, in view of Best, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the

system/method describe Donahue, by providing the three levels as taught by Best, since Best suggests (Best, col 5, lines 43 - 67; col 6, lines 1- 26, "For example, recommendations are made for Struggling readers to spend additional instruction time on a specific Struggling Reader Intervention component in the curriculum, to administer Phoneme Segmentation Fluency and Nonsense Word Fluency measures weekly, and to use specific Models and Games from the curriculum. Recommendations are made for low-scoring Emerging readers to use a specific Struggling Reader Intervention component in the curriculum and to administer Phoneme Segmentation Fluency and Nonsense Word Fluency measures monthly") different recommendation for proficiency levels.

[Claim 14] The system of Claim 13, wherein the performance evaluation is a game, a lesson, a quiz, or a test (Danohue, [0034]).

[Claim 17] The system of Claim 13, wherein the student performance data comprises a score achieved by the student on a performance evaluation, and wherein the performance evaluation is a game, a lesson, a quiz or a test (Danohue, [0034]).

[Claims 13, 15, 30, 33] Donahue does not specifically disclose a spatial temporal math video game. However, Shaw teaches (Shaw, pgs 22 - 28, "ROLE OF MUSIC EDUCATION IN LEARNING MATH AND SCIENCE"; pg 189, "FIRST VERSION OF S.T.A.R."; pg 275, "SPATIAL-TEMPORAL TRAINING USING S.T.A.R. TO IMPROVE MATH"; pg 275, "Matthew Peterson quickly became (and remains) the chief architect and developer of the now proven and highly successful math video game S.T.A.R. and its evaluation program S.T.A.R.") a spatial temporal math video game. Shaw further states (Shaw, pg 189) "S.T.A.R. takes children through two stages. The first stage is a multi-level spatial-temporal training in the form of various games." Therefore, in view of Shaw, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system/method described in Donahue, by providing the S.T.A.R. as taught by Shaw, since Shaw (Shaw, pg 201) "The ST methods in S.T.A.R. can be extended to

almost all math at all levels. As an example, the use of symmetries in ST methods has been used successfully by Xiao Leng in analyzing the behavior of equations for a pre-calculus course that she teaches at Pasadena City College. Thus, the use of spatial-temporal methods to enhance understanding of math is not limited to disadvantaged and/or very young students." (Shaw, pgs 274 - 275) "The chief goals of S.T.A.R. were to teach fractions, proportional math, and symmetry operations to 2nd grade children. These math concepts were all successfully included in S.T.A.R. in a manner that was readily understood and mastered by these children, as measured by S.T.A.R. E.P"

Re claim 16:

The system of Claim 13, wherein the student performance data indicates a source of the data (Danohue, [0035] - [0045], [0059] - [0060]).

Re claim 18:

The system of Claim 13, wherein the student performance data indicating a student, teacher, or school that is the source of the test data, wherein the data is encrypted. (Donahue, [0048], [0060], [0067], "user logs in" a user logs in the system, therefore, the test data is encrypted.)

Re Claim 31:

Donahue discloses the recommendation data including an optional course of action (Danohue, [0062]).

Re Claim 32:

Donahue discloses the recommendation data including a corrective course of action (Danohue, [0062]).

Re Claims 30, 33:

Donahue discloses that actions may include remedial elements (Danohue, [0033]; see Claims 13, 15, 30, 33 above).

Re claim 34:

Donahue discloses the education module is further configured to generate student performance data after student response data received(Donahue, [0059], fig 1, "ASSESSMENT ANALYSIS").

Re claim 35:

Donahue does not disclose a system wherein the student performance data comprises a game result. However, Shaw teaches (Shaw, pgs 22 - 28, "ROLE OF MUSIC EDUCATION IN LEARNING MATH AND SCIENCE"; pg 189, "FIRST VERSION OF S.T.A.R."; pg 275, "SPATIAL-TEMPORAL TRAINING USING S.T.A.R. TO IMPROVE MATH"; pg 275, "Matthew Peterson quickly became (and remains) the chief architect and developer of the now proven and highly successful math video game S.T.A.R. and its evaluation program S.T.A.R.") a spatial temporal math video game. Shaw teaches game results (Shaw, pg 27, "The results shown in Fig. 2.5 show how rapidly the 2nd grade children master the concepts in S.T.A.R."; pg 191)

Therefore, in view of Shaw, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system/method described in Donahue, by providing the S.T.A.R. as taught by Shaw, since Shaw (Shaw, pg 201) "The ST methods in S.T.A.R. can be extended to almost all math at all levels. As an example, the use of symmetries in ST methods has been used successfully by Xiao Leng in analyzing the behavior of equations for a pre-calculus course that she teaches at Pasadena City College. Thus, the use of spatial-temporal methods to enhance understanding of math is not limited to disadvantaged and/or very young students." (Shaw, pgs 274 - 275) "The chief goals of S.T.A.R. were to teach fractions, proportional math, and symmetry operations to 2nd grade children. These math concepts were all successfully included in S.T.A.R. in a manner that was readily understood."

9. Claims 19 - 20, 24 - 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donahue (US 2003/00309948) in view of Sugimoto (US 2002/0102522).

Re Claims 19-20 and 24-25:

Donahue discloses a method of analyzing successive performances by a student for a computerized quiz and providing feedback based on the performances, the method comprising:

determining, via a computer system, whether a student score is above a threshold passing score to identify that the student has achieved a passing score on a quiz (Donahue, [0055]),

comparing the passing score of the student to at least one score obtained from at least one subsequent quiz (Donahue, [0061]),

determining, via a computer system, whether the student is authorized to progress to a next task of a curriculum or whether the student needs assistance from an instructor based on the comparison (Donahue, [0061] - [0062]),

analyzing the passing score of the student and the at least one subsequent quiz score to generate a learning curve (Donahue, [0049]).

Donahue additionally discloses providing feedback that a student should continue the quiz and/or be given extra attention if the student fails to pass a specific threshold after attempting a quiz a predetermined number of times (Donahue, [0057] - [0058]), wherein the method is performed by one or more computing devices (Donahue, [0009]). Donahue also discloses the invention embodied on a computer readable storage medium (as per claims 24-25; Donahue, [0010]).

Sugimoto (US 2002/0102522) teaches a method for performing an adaptive test, more particularly to technology for properly evaluating a solver in the adaptive test. Sugimoto further teacher calculating a best fit curve to the learning curve (Sugimoto, fig 14, “Determine difficulty for next question” ; “Select one question with the set difficulty”); extrapolating the best fit curve to determine whether the threshold passing score will be reached within a maximum allotted number of times of taking the quiz (Sugimoto, fig 14, “Number of output question >= Maximum number of

output question"; [0053] - [0058], [0067], [0093] - [0094]). In view of Sugimoto, it would have been obvious to one of ordinary skill in the art at the time the invention was made to generate and extrapolate a best fit curve, thereby providing the student will a visual indication of his/her progress to preemptively determine if a progress goal will not be met in time. Sugimoto further states (Sugimoto, [0003]) "if the solver has to answer each question within its time limit, there are some undesirable cases where the solver feels much pressure and cannot calm down with time in mind too much to answer properly. If the solver feels the pressure to time, the efficient evaluation, which is a characteristic of the adaptive test, becomes impossible, since the accurate measurement of the ability is impossible and the results of the answers do not converge."

10. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donahue (US 2003/00309948) in view of Sugimoto (US 2002/0102522) and Best et al. (US 6,676,413 B1).

Re claim 40:

Donahue does not disclose each quiz can have a different minimum slope. However, Best teaches wherein each quiz can have a different minimum slope (Best, fig 7, Score vs. Benchmark Period; a plurality of scores form a graph for individual profile - Richard S Hall wherein each profile **CAN HAVE** a minimum slope. There are plurality of profiles and a plurality of quizzes).

Therefore, in view of Best, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the method described in Donahue, by providing the minimum slope as taught by Best, Since Best states (Best, col 6, lines 38 - 46) "FIG. 7 depicts a timeline plot of benchmark and weekly progress test results for an individual student for a single fluency test. Benchmark result 37 and weekly test results 38 are plotted on a timeline along with a grade level literacy target score 39, in order to show the student's progress toward grade level literacy. Such a graphical presentation of test scores assists the teacher to determine whether the student is making satisfactory progress toward grade level literacy."

12. Claims 21 - 22, 26 - 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donahue (US 2003/0039948) and Sugimoto (US 2002/0102522), as applied to claims 19 and 24 above, and further in view of Mizume et al. (US 2004/0033475).

Re Claims 21 and 26:

Donahue discloses comparing quiz scores to previous quiz scores as discussed above. However, Donahue does not specifically disclose comparing the quiz scores against the number of times the quiz is taken for the more recent day. Thomas discloses comparing the quiz scores against the number of times the quiz is taken for all days the quiz is taken (Thomas, Fig. 5C). Mizuma et al. disclose that progress reports showing daily reports (Mizuma, [0066]). Therefore, in view of Thomas and Mizume, it would have been obvious to one of ordinary skill in the art at the time the invention was made to analyze the scores for the most recent day, thereby providing a detailed data to analyze for a specific part of the full performance history.

Re claims 22 and 27:

Donahue discloses comparing quiz scores to previous quiz scores as discussed above. However, Donahue does not specifically disclose comparing the quiz scores against the number of times the quiz is taken for all days the quiz is taken. Thomas discloses comparing the quiz scores against the number of times the quiz is taken for all days the quiz is taken (Thomas, Fig. 5C). In view of Thomas, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compare the quiz scores against the number of times the qui is taken for all days, thereby providing a complete history of data to analyze.

11. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donahue (US 2003/0039948) in view of Sugimoto (US 2002/0102522), "Keeping Mozart in Mind" by Gordon L. Shaw (Copyright 2000) denote as Shaw, and Calhoun et al. (US 2003/0059759).

Re Claim 23:

Donahue discloses determining a concept to be taught to a student and formulating and administering, via a computer system, a basic test of the concept to the student (Donahue,

[0049]), wherein the concept may include mathematical concepts (Donahue, [0104]), testing the concept to obtain a progress curve of student scores (Donahue, [0049], [0055]), determining successful learning and retention of the concept (Donahue, [0063]), administering, via a computer system, a diagnostic quiz of the concept to the student (Donahue, [0053]), determining adjustments and redesigning the system and lesson elements based on a comparison of the history of results from the assessment components (Donahue, [0084] - [0086], [0097] - [0098]), and integrating the system and lessons into an educational curriculum (Donahue, Abstract), wherein the method is performed by one or more computing devices (Donahue, [0009]). However, Donahue does not specifically disclose a spatial temporal test, using games of the mathematical concepts, using the progress curve to determine learning and retention of the concept, determining if the game score is commensurate with the test score, and determining if the game score is commensurate with the diagnostic quiz score.

However, Sugimoto (US 2002/0102522) teaches a method for performing an adaptive test, more particularly to technology for properly evaluating a solver in the adaptive test. Sugimoto further teacher calculating a best fit curve to the learning curve (Sugimoto, fig 14, "Determine difficulty for next question" ; "Select one question with the set difficulty"); extrapolating the best fit curve to determine whether the threshold passing score will be reached within a maximum allotted number of times of taking the quiz (Sugimoto, fig 14, "Number of output question >= Maximum number of output question"; [0053] - [0058], [0067], [0093] - [0094]). In view of Sugimoto, it would have been obvious to one of ordinary skill in the art at the time the invention was made to generate and extrapolate a best fit curve, thereby providing the student will a visual indication of his/her progress to preemptively determine if a progress goal will not be met in time. Sugimoto further states (Sugimoto, [0003]) "if the solver has to answer each question within its time limit, there are some undesirable cases where the solver feels much pressure and cannot calm down with time in mind too much to answer properly. If the solver feels the pressure to time, the efficient evaluation, which is a characteristic of the adaptive test, becomes impossible, since the accurate measurement of the ability is impossible and the results of the answers do not converge."

However, Shaw teaches (Shaw, pgs 22 - 28, “ROLE OF MUSIC EDUCATION IN LEARNING MATH AND SCIENCE”; pg 189, “FIRST VERSION OF S.T.A.R.”; pg 275, “SPATIAL-TEMPORAL TRAINING USING S.T.A.R. TO IMPROVE MATH”; pg 275, “Matthew Peterson quickly became (and remains) the chief architect and developer of the now proven and highly successful math video game S.T.A.R. and its evaluation program S.T.A.R.”) a spatial temporal math video game. Shaw further states (Shaw, pg 189) “S.T.A.R. takes children through two stages. The first stage is a multi-level spatial-temporal training in the form of various games.” Shaw further teaches determining that the game is deficient if the game score is not commensurate with the diagnostic quiz score, and determining adjustments to the game (Shaw, pgs 22 - 28, “ROLE OF MUSIC EDUCATION IN LEARNING MATH AND SCIENCE”; pg 189, “FIRST VERSION OF S.T.A.R.”; pg 275, “SPATIAL-TEMPORAL TRAINING USING S.T.A.R. TO IMPROVE MATH”; pg 275). Therefore, in view of Shaw, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system/method described in Donahue, by providing the S.T.A.R. as taught by Shaw, since Shaw (Shaw, pg 201) “The ST methods in S.T.A.R. can be extended to almost all math at all levels. As an example, the use of symmetries in ST methods has been used successfully by Xiao Leng in analyzing the behavior of equations for a pre-calculus course that she teaches at Pasadena City College. Thus, the use of spatial-temporal methods to enhance understanding of math is not limited to disadvantaged and/or very young students.” (Shaw, pgs 274 - 275) “The chief goals of S.T.A.R. were to teach fractions, proportional math, and symmetry operations to 2nd grade children. These math concepts were all successfully included in S.T.A.R. in a manner that was readily understood and mastered by these children, as measured by S.T.A.R. E.P”

Calhoun et al. teach that initial testing may be performed to gauge an individual's abilities, followed by comparing the individual's progress to determine a correlation (Calhoun, [0072] - [0076]). In view of Calhoun, it would have been obvious to use the comparisons of the

assessment components to determine if the various scores are commensurate, thus achieving the predictable result of determining if the student is benefiting from the lesson programs.

12. Claims 41 - 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al. (US 2004/0005536) in view of Ferriol et al. (US 2003/0129574).

Re claim 41:

Lai discloses a method of analyzing successive performances by a student for a computerized quiz and providing feedback based on the performances (Lai, Abstract; "student's performance results"), the method comprising:

determining, via a computer system, whether a student score is above a threshold passing score to identify that the student has achieved a passing score on a quiz (Lai, fig 8A, "System compares the student's ongoing performance results with the criteria of the next test item"; [0034]);

comparing the passing score of the student to at least one score obtained from at least one subsequent quiz (Lai, fig 8A, "System compares the student's ongoing performance results with the criteria of the next test Item."; [0034]);

determining, via the computer system, whether the student is authorized to progress to a next task of a curriculum or whether the student needs assistance from an instructor based on the comparison (Lai, fig 2E, "Training Plan and Summery", [0007], "identify a particular deficiency and a training recommendation module…");

analyzing the passing score of the student and the at least one subsequent quiz score to generate a learning curve and determine whether a deviation in a learning rate exists (Lai, fig 3B - 3C, fig 5C);

calculating a best fit curve to the learning curve (Lai, fig 3B, [0045] - [0046]; Lai teaches a learning curve define a best curve for an individual.).

Lai does not draw the fitting curve. Ferriol teaches a FIG. 27 is a graph of latency of response versus the number of trials used in the system(Ferriol, fig 27). Ferriol teaches a method for

determining a slope of the best fit curve (Ferriol, [00493], “the item difficulty (learning slope)”); generating feedback data based on the determination of whether the slope of the best fit curve is greater or equal to a minimum slope for the quiz (Ferriol, [0043], "any other method to determine the measurement of item difficulty, and using a statistical linear model based on analysis of previous user data."). Ferriol's statistical linear model determines the difficulty of an item (minimum slope) based on a user's previous data. Therefore, in view of Ferriol, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the method described in Lai, by providing the fitting curve as taught by Ferriol, since Ferriol states (Ferriol, [0003]) “apparatus and method for learning, and more specifically, relates to a system, apparatus and method for interactively and adaptively maximizing the effectiveness and efficiency of learning, retaining and retrieving knowledge and skills including accurately determining a memory indicator for knowledge and skills being learned during all phases of learning and controlling when learning and reviewing of knowledge and skills optimally begins and ends based on the memory indicator.”

Re claim 41:

Lai discloses a method of analyzing successive performances by a student for a computerized quiz and providing feedback based on the performances (Lai, Abstract; “student’s performance results”), the method comprising:

determining, via a computer system, whether a student score is above a threshold passing score to identify that the student has achieved a passing score on a quiz (Lai, fig 8A, “System compares the student’s ongoing performance results with the criteria of the next test item"; [0034]);

comparing the passing score of the student to at least one score obtained from at least one subsequent quiz (Lai, fig 8A, “System compares the student's ongoing performance results with the criteria of the next test Item.”; [0034]);

determining, via the computer system, whether the student is authorized to progress to a next task of a curriculum or whether the student needs assistance from an instructor based on the

comparison (Lai, fig 2E, "Training Plan and Summery", [0007], "identify a particular deficiency and a training recommendation module…");

analyzing the passing score of the student and the at least one subsequent quiz score to generate a learning curve and determine whether a deviation in a learning rate exists (Lai, fig 3B - 3C, fig 5C);

Ferriol teaches (Ferriol, [0356]) "That is, the sequence of the items in each group are presented to the user in each of the Learn Module 21, the Review Module and the Test Module 23 without ever querying the user as to whether the user thinks or perceives he knows the correct response or answer. Thus, the items to be learned, reviewed and tested are presented based on the predetermined grouping and sequencing of those items and the grouping and sequencing is not based on the user's perception as to whether the items are known or unknown." The system predetermined the sequencing of learning items (standard curve), as the predetermined sequence adapts to a user's response to the items (Comparing the larning curve to the standard curve). Ferriol's system generates feedback data regarding the stage of learning for the student based on the comparison (Ferriol, fig 1, 22, "REVIEW MODULE"; [0180]). Therefore, in view of Ferriol, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the method described in Lai, by comparing predetermined learning curve to as taught by Ferriol, since Ferriol states (Ferriol, [0181]) "the system 10 monitors the users as he learns, reviews and tests himself on each item. Based on measured quantitative results gathered overtly and covertly as described above, the system 10 quantitatively determines when the next review session must occur to maintain the desired level of retention. Thus, the system 10 is adapted to the individual needs of each user."

Response to Arguments

13. Applicant's arguments with respect to claims 1 - 42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACK YIP whose telephone number is (571)270-5048. The examiner can normally be reached on Monday - Friday 9:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (571)272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. Y./
Examiner, Art Unit 3715

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